

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(original)** A phosphorus-containing polymer, comprising the reaction product of an unsaturated phosphonic acid with a chain-transfer agent, the polymer having improved biodegradability as compared to the same polymer when made in the absence of the chain-transfer agent.
2. **(original)** A polymer according to Claim 1, the polymer having a biodegradability of at least 20% per 28 days (as determined by OECD 306).
3. **(original)** A polymer according to Claim 1, in which the chain-transfer agent is benzene, toluene, ethylbenzene or chlorobenzene.
4. **(original)** A polymer according to Claim 1, in which the chain-transfer agent is methylene chloride, ethylene chloride, chloroform or carbon tetrachloride.

5. **(original)** A polymer according to Claim 1, in which the chain-transfer agent is acetone, thiophenol, n-butyl thiol or dodecyl thiol.

6. **(original)** A phosphorus-containing polymer comprising the reaction product of a chain-transfer agent having at least one P-H bond with an unsaturated carboxylic, phosphonic or sulphonic acid, the polymer having a biodegradability of at least 20% per 28 days (as determined by OECD 306).

7. **(original)** A polymer according to Claim 6, having phosphorus-containing end-caps and comprising the reaction product of a chain-transfer agent having at least one P-H bond with an unsaturated carboxylic, phosphonic or sulphonic acid, said polymer having a biodegradability of at least 20% per 28 days (as determined by OECD 306).

8. **(currently amended)** A polymer according to Claim 6 [[or 7]], in which the chain-transfer agent having at least one P-H bond is hypophosphorous acid or a water-soluble salt of said acid.

9. **(original)** A polymer according to Claim 8, in which the chain-transfer agent is an alkali metal salt or an ammonium salt of hypophosphorous acid.

10. **(currently amended)** A polymer according to Claim 6 ~~any one of Claims 6 to 9~~, in which the unsaturated carboxylic acid is acrylic acid or a water-soluble salt of said acid.

11. **(currently amended)** A polymer according to Claim 6 ~~any one of Claims 6 to 9~~, in which the unsaturated carboxylic acid is methacrylic acid, maleic acid, fumaric acid, itaconic acid, aconitic acid, citraconic acid, mesaconic acid, crotonic acid, isocrotonic acid, angelic acid, tiglic acid or a water-soluble salt of any of said acids.

12. **(currently amended)** A polymer according to Claim 1 ~~or to any one of Claims 6 to 9~~, in which the unsaturated phosphonic acid is vinylphosphonic acid (VPA), vinylidene-1,1-diphosphonic acid (VDPA) or a water-soluble salt of either of said acids.

13. (currently amended) A polymer according to Claim 6 ~~any one of Claims 6 to 9~~, in which the unsaturated sulphonic acid is vinylsulphonic acid (VSA) or a water-soluble salt of said acid.

14. (currently amended) A polymer according to Claim 1 ~~any one of Claims 1 to 10~~, comprising a telomer which is the reaction product of an adduct of vinylphosphonic acid and hypophosphorous acid (hereinafter referred to as a PPE-endcapper) ~~(as hereinbefore defined)~~ with acrylic acid.

15. (original) A polymer according to Claim 14, in which the ratio of the PPE-endcapper to acrylic acid is in the range 1:5 to 1:20 molar.

16. (currently amended) A polymer according to Claim ~~[[14 or]]~~ 15 in which the ratio of the PPE-endcapper to acrylic acid is about 1:10 molar.

17. (currently amended) A polymer according to Claim 1 ~~any one of Claims 1 to 16~~, in which at least 20% by weight of the polymer has a weight average molecular weight of 1000 or lower.

18. **(original)** A polymer according to Claim 17, in which at least 35% by weight of the polymer has a weight average molecular weight of 1000 or lower.

19. **(currently amended)** A method of making a polymer according to claim 1 ~~any one of Claims 1 to 18~~, in which the chain-transfer agent and the unsaturated acid are reacted together in the presence of a free-radical initiator.

20. **(original)** A method according to Claim 19, in which the free-radical initiator is an alkali metal persulphate.

21. **(original)** A method according to Claim 20, in which the free-radical initiator is sodium persulphate.

22. **(original)** A method according to Claim 19, in which the free-radical initiator is an alkali metal peracetate, hydrogen peroxide, a hydroperoxide, chlorine dioxide, an alkali metal chlorate or hypochlorite, an organometallic hydride, an azo-compound or any two or more of the foregoing.

23. (original) A method according to Claim 22, in which the free-radical initiator is 4,4'-azo-bis-cyanovaleric acid.

24. (original) A method according to Claim 19, in which the free-radical initiator comprises electrolysis, ultraviolet or other ionising radiation, ultrasound or any two or more of the foregoing.

Claim 25 (canceled).

26. (original) A phosphorus-containing polymer comprising the reaction product of a chain transfer agent with an unsaturated carboxylic, phosphonic or sulphonic acid, the polymer having improved biodegradability as compared to the same polymer when made in the absence of the chain-transfer agent.

27. (currently amended) A phosphorus-containing polymer as claimed in Claim ~~[[25]]~~ 26 having phosphorus-containing end caps.

Claims 28-29 (canceled).

30. (New) A polymer according to Claim 6 in which the unsaturated phosphonic acid is vinylphosphonic acid (VPA) vinylidene-1,1-diphosphonic acid (VDPA) or a water-soluble salt of either of said acids.

31. (New) A polymer according to claim 6, comprising a telomer which is the reaction product of a PPE-endcapper with acrylic acid, wherein said PPE-endcapper is a reaction product of an adduct of vinylphosphonic acid and hypophosphorous acid.

32. (New) A method of making a polymer according to claim 6, in which the chain-transfer agent and the unsaturated acid are reached together in the presence of a free-radical initiator.